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ABSTRACT

Since 1961, when the Data Processing Department was formed at Kansas City Kansas Community College (KCKCC), data processing education has radically changed, in structure, focus, content, and students. Where once computer courses were taught only by the Data Processing Department, currently computer-related courses can be found in many different departments across campus, with each department choosing hardware to support its particular needs. The data processing faculty is committed to teaching the practical applications of computers in the business world, which requires keeping track of an ever-changing marketplace as well as of the latest changes in the computer field. In the past 5 years, trends have emerged toward a preference for a bachelor's degree for entry-level programmers, and toward the use of pre-written software rather than custom-tailored programming. KCKCC has responded to these changes with curricular additions, including a course in Database Management Theory, a course in Business Graphics, one-hour credit mini-courses focusing on specialized business applications, and an additional computer literacy course for students who are not majoring in computer studies. The past 5 years have also seen a change in the student body from the terminal degree student to the transfer student, with four-year college graduates also well represented in the population. Curriculum development at KCKCC will doubtlessly continue as the college seeks to meet the changing needs of its students. (EJV)

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The Changing Role of Computer Education in the Community College.

by

Teresa Sullivan
Kansas City Kansas
Community College

November 1986

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November, 1986

The Changing Role of Computer Education in the Community College

by Teresa Sullivan

Upon my arrival as a new faculty member at Kansas City Kansas Community College in 1981, I found that not much had changed in data processing education since I had taken my first programming courses at IBM in 1964. Oh, the setting was different, Kansas City Kansas Community College is located in a pastoral setting of heavy industrial Wyandotte County, ten miles west of downtown. The campus is located on 108 acres of rolling terrain, including a small lake inhabited by ducks and a 35-acre nature trail. It was quite a change in locale from the steel and glass office buildings of IBM, amid the cement canyons of New York City.

A glance at the textbook showed that the beginning programming language was different, Basic instead of Autocoder, but the curriculum was virtually the same as it had been in 1964 at the IBM training center. Students began their studies with an introductory course in the principles of programming, followed by courses in business computer languages including RPG and COBOL, terminating their studies in Systems Analysis & Design and Assembly Language. Yes, it all looked very familiar, even down to the Assembly Language being taught which was the same as the Spectra 70 Assembly Language course which I had taught at RCA in 1968 at the Rockefeller Center training office.

The computer hardware was considerably changed, the trusty old IBM 1401 with punched card input, on which I had begun my programming career, had been replaced by a cute, little table-top personal computer with a keyboard, floppy disk and a display screen. The bulky IBM 7070 mainframe, with which I had struggled, using tape, had been replaced with remote terminals hooked up to an IBM 4331 at the Wyandotte County Courthouse, downtown, using hard disk.

At KCKCC, the computer courses were all a part of the Business Division in a department named Data Processing. Today, 5 years later, the Data Processing department still exists, in the same division, but its focus has changed radically. Now, one can find computer related courses in many different departments across the campus, as diverse as math, biology, economics, electronics technology, secretarial studies, drafting, accounting, computer science, and art.

Various brands and models of computers can be found scattered throughout our eight building campus in the Nursing Department, the counseling area, the administration offices, the Art Department, the Electronics Technology Department, the Drafting Department and the Continuing Education Division. Each application area has chosen hardware to support its particular needs. Our Data Processing Department uses 10 IBM-PC's in a local area network environment and a ARCnet-based local area network with 60 terminals located throughout the campus.

The theoretical approach which computer science affords is the current trend in the universities. However, the data processing faculty is committed to the practical application of computers in the business world, addressing the needs of our students for immediate employment. We recently held a meeting of business users in our community to ascertain the current needs of the business community. This alliance with business is necessary to keep track of an ever changing marketplace.

How have these changes evolved and where do we go from here? These questions have been the focus of the dp faculty at KCKCC for the past twenty five years. The Data Processing Department at KCKCC was formed in 1961 with the installation of an IBM 1401 with 2K of main storage. Our full time data processing faculty had increased from two instructors in 1980 to 5 data processing instructors and 2 computer science instructors in 1985. Keeping the dp faculty abreast of the latest changes in the computer field is a constant challenge. Toward this objective, the faculty members must constantly attend seminars and courses at other colleges, computer manufacturers and industry workshops.

KCKCC offers a two year Associate in Applied Science Degree in Data Processing and an Associate in Science Degree in Computer Science. The graduate in Data Processing can continue studies in the School of Business at surrounding four year institutions in both Kansas and Missouri or can enter directly into the business community. The graduate in computer science is able to continue advanced studies at universities emphasizing the theoretical aspects of computer design. This was not the case five years ago as very few colleges and universities in Kansas or Missouri offered a degree in computer science.

For the past 25 years, the main thrust of the degree in data processing has been in the teaching of computer languages for programming business applications. However, in the past five years, we have seen the trend, in both the local and national business communities, toward a preference for a

bachelor's degree for entry level programmers. This is due in part to the availability of four year graduates. Five years ago, our programming students could not finish the two year degree program fast enough to keep pace with business demand for computer personnel, many finding employment prior to graduation. Now, our graduates are encountering increased difficulty in finding entry level programming positions.

The KCKCC data processing enrollment peaked in 1983, reflecting a 300% increase in credit hour enrollment over our 1977 level. Since 1983, we have seen a decline of 70% in data processing credit hours. However, in the past year, our computer science enrollment has increased tenfold. In the future we anticipate a return to our earlier, more stable, data processing enrollment pattern with a continued increase in our computer science enrollment.

The gradual change in the business community has been toward a pre-written software user environment and away from a custom tailored programming environment. These rapid changes have resulted in changes in job openings for the associate degree student. Positions now available in the computer job market include openings for data entry operators, computer operators and software application users. As these changes occur in the business world, our curriculum is changing rapidly to meet these needs.

At KCKCC, our curriculum changes in data processing have included the addition of a course in Database Management Theory using dBASEII in 1985. In 1984, we introduced a course in Business Application Software Packages including Wordstar and Lotus 1-2-3. This semester, we have introduced a course in Business Graphics using BPS. Beginning in Fall 1987, we will be implementing a wholly new concept at KCKCC, one credit hour mini-courses. These courses, featuring

specialized business applications, include Using Spreadsheets(Supercalc), Using dBASEIII, Using Wordstar. These mini-courses can be taken at any time during the semester, allowing the businessman to enroll as the need arises.

In the past five years, we have also seen a change in our student body from the terminal degree student to the transfer student, i.e. the student going on to a four-year degree program. In addition to training the beginning student, we are also addressing the needs of industry to retrain current employees. In the business world, it is important that computer personnel understand the rudiments of the business application of the company. Therefore, many business corporations prefer to train current workers, rather than hire new employees with computer skills. The Continuing Education Division offers courses for specific business needs both at our campus and at the business site.

Another change in our college-wide curriculum has included an additional computer literacy course for all students who are not majoring in computer studies. Our entire student body is required to take a course in computer literacy or a foreign language as past of the requirements for the A.A. degree. The computer literacy course is taught by the data processing faculty. The emphasis in this course is on many, varied applications to address the interests of students from many different majors. Our courses in specialized areas are taught by faculty from those disciplines who have acquired computer knowledge. As part of our staff and faculty development effort, various faculty members have offered in-service courses in computer concepts, Wordstar, Lotus 1-2-3, and other software packages.

Our student population includes graduates of four year programs who wish to obtain computer skills. These students attend our school for specific vocational training to prepare themselves for entry into the job market. This results in a very diverse student body with an average age of 29 years. We are constantly revising our curriculum to address the needs of all our students.

For those students wishing to receive an Associate in Science Degree we offer the first two years of a four year program in computer science in conjunction with a nearby university. The curriculum in computer science includes courses in Pascal, Programming Structure, and FORTRAN.

What will the community college computer curriculum look like in the next few decades? I foresee a continuing trend toward user application software courses both in data processing, as well as all other areas of study. There will continue to be a need for computer programmers, though not in the numbers that we have trained in the past five years. The job market for graduates with computer knowledge and computer skills will continue to increase, as more and more businesses implement computers in more and more applications. One need only to look around at the local branch of the bank, at the airport, the supermarket or the department store to see the employees whose jobs are affected by the computer. The emphasis in training will continue toward brief mini-courses and away from the traditional semester-long courses.

As the cost of four year universities continues to escalate, I predict that we will see more and more students beginning their higher education in the community college. We will see more graduates continuing on to four year schools than we have in the past. The computer science area will continue to grow to satisfy the needs of these continuing students. We, at KCKCC, will continue to revise our curriculum to meet the changing needs of our students.

KANSAS CITY KANSAS COMMUNITY COLLEGE

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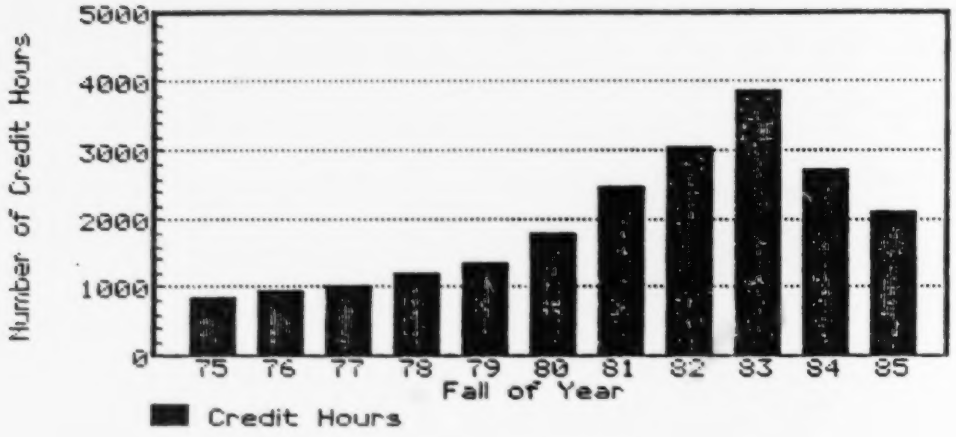

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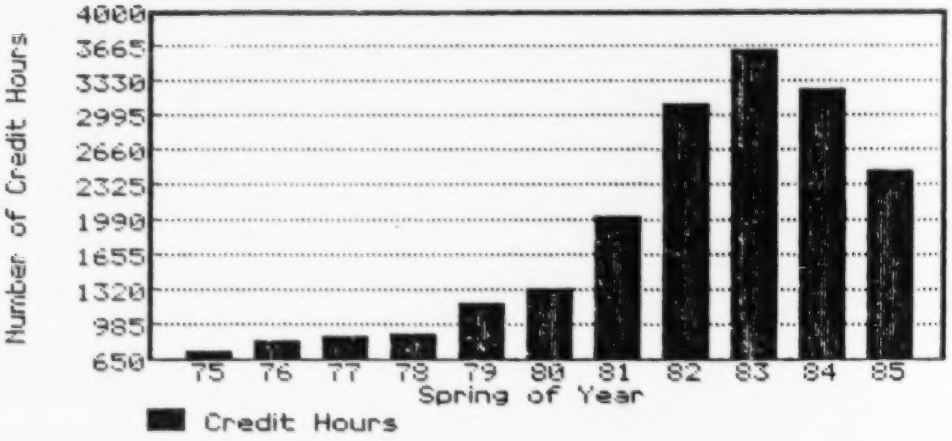

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Employment History:

1981-current date	Instructor of Data Processing, Kansas City Kansas Community College
1980-1981	BASIC language programmer, Data Systems Design, Kansas City, Mo.
1968-70	Data Processing Instructor, SBC division of IBM Corp. New York City
1966-68	System Service Representative and Instructor, RCA Corp., New York City
1964-1966	COBOL and Autocoder Programmer, The Bank of New York, New York City
1962-1964	Junior High School Math Teacher, Board of Education New York City

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1983-1987	M.A. Adult and Continuing Education, University of Missouri, Kansas City
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